

## CLAIMS

What is claimed is:

- 1           1.     A current controlled voltage regulator, comprising:
  - 2           a control circuit coupled to receive first and second signals indicative of a
  - 3           drive level of the voltage regulator and coupled to provide a control signal in
  - 4           response to a difference between the first and second signals; and
  - 5           a conduction device coupled to receive the control signal and coupled to
  - 6           decrease conduction if the difference increases and increase conduction if the
  - 7           difference decreases, wherein the change in conduction is substantially
  - 8           proportional to the difference between the first and second signals.
  
- 1           2.     The current controlled voltage regulator of claim 1, wherein the
  - 2           control circuit comprises an operational amplifier.
  
- 1           3.     The current controlled voltage regulator of claim 1, wherein the
  - 2           control circuit comprises:
    - 3           a first conversion device coupled to receive the first signal and coupled to
    - 4           provide a digital representation of the first signal;
    - 5           a second conversion device coupled to receive the second signal and
    - 6           coupled to provide a digital representation of the second signal; and
    - 7           a third conversion device coupled to receive the first and second digital
    - 8           representations and coupled to provide a difference between the first and second
    - 9           digital representations.
  
- 1           4.     The current controlled voltage regulator of claim 1, wherein the
  - 2           conduction device comprises a transistor having a first conduction terminal

3 coupled to receive the first signal and a control terminal coupled to receive the  
4 control signal.

1 5. The current controlled voltage regulator of claim 4, wherein the  
2 transistor includes a field effect transistor.

1 6. An article of manufacture comprising a program storage medium  
2 readable by a computer, the medium tangibly embodying one or more programs of  
3 instructions executable by the computer to perform a method of operating a  
4 current controlled voltage regulator, the method comprising:  
5 receiving first and second signals indicative of a drive level of the voltage  
6 regulator;  
7 computing a difference between the first and second signals; and  
8 controlling a conductive state of a conduction device in response to the  
9 difference, wherein the conductive state is changed substantially in proportion to  
10 the difference.

1 7. The article of manufacture of claim 6, wherein receiving first and  
2 second signals comprises using a resistive component to develop a potential  
3 difference between the first and second signals, wherein the potential difference is  
4 indicative of the drive level.

1 8. The article of manufacture of claim 6, wherein computing the  
2 difference comprises:  
3 receiving the first signal at an input of a first conversion device;  
4 receiving the second signal at an input of a second conversion device; and  
5 generating the difference at the output of a third conversion device.

1           9.     A method of operating a current controlled voltage regulator,  
2 comprising:

3           receiving first and second signals indicative of a drive level of the voltage  
4 regulator;

5           measuring a difference between the first and second signals; and

6           controlling a conductive state of a conduction device in response to the  
7 difference, wherein the conductive state is changed in proportion to the difference.

1           10.    The method of claim 9, wherein receiving first and second signals  
2 comprises using a resistive component to develop a potential difference between  
3 the first and second signals; wherein the potential difference is indicative of the  
4 drive level.

1           11.    The method of claim 9, wherein measuring the difference comprises:  
2 receiving the first signal at a first input of an amplifier;  
3 receiving the second signal at a second input of the amplifier; and  
4 generating the difference at the output of the amplifier.

1           12.    The method of claim 9, wherein measuring the difference comprises:  
2 receiving the first signal at an input of a first conversion device;  
3 receiving the second signal at an input of a second conversion device; and  
4 generating the difference at the output of a third conversion device.

1           13.    In a power supply, a voltage regulator controlling output current to  
2 substantially eliminate voltage variations, the voltage regulator comprising:

3           a current control circuit coupled to receive first and second signals  
4 indicative of a drive level of the voltage regulator and coupled to provide a control  
5 signal in response to a difference between the first and second signals; and

6 a current conduction device coupled to receive the control signal and  
7 coupled to increase current conduction if the difference decreases and decrease  
8 current conduction if the difference increases, wherein the change in conduction is  
9 substantially proportional to the difference between the first and second signals.

1 14. The current controlled voltage regulator of claim 13, wherein the  
2 current control circuit comprises an operational amplifier.

1 15. The current controlled voltage regulator of claim 13, wherein the  
2 current control circuit comprises:

3 a first conversion device coupled to receive the first signal and coupled to  
4 provide a digital representation of the first signal;

5 a second conversion device coupled to receive the second signal and  
6 coupled to provide a digital representation of the second signal; and

7 a third conversion device coupled to receive the first and second digital  
8 representations and coupled to provide a signal substantially proportional to the  
9 difference between the first and second digital representations.

1 16. The current controlled voltage regulator of claim 13, wherein the  
2 current conduction device comprises a transistor having a first conduction  
3 terminal coupled to receive the first signal and a control terminal coupled to  
4 receive the control signal.

1 17. The current controlled voltage regulator of claim 16, wherein the  
2 transistor includes a field effect transistor.

1        18.    A current controlled voltage regulator, comprising:  
2        a control means coupled to receive first and second signals indicative of a  
3        drive level of the voltage regulator and coupled to provide a control signal in  
4        response to a difference between the first and second signals; and  
5        a conduction means coupled to receive the control signal and coupled to  
6        increase conduction if the difference decreases and decrease conduction if the  
7        difference increases, wherein the change in conduction is substantially  
8        proportional to the difference between the first and second signals.

1        19.    The current controlled voltage regulator of claim 18, wherein the  
2        control means comprises an operational amplifier.

1        20.    The current controlled voltage regulator of claim 18, wherein the  
2        control means comprises:

3        a first conversion means coupled to receive the first signal and coupled to  
4        provide a digital representation of the first signal;

5        a second conversion means coupled to receive the second signal and  
6        coupled to provide a digital representation of the second signal; and

7        a third conversion means coupled to receive the first and second digital  
8        representations and coupled to provide a signal substantially proportional to the  
9        difference between the first and second digital representations.

1        21.    The current controlled voltage regulator of claim 18, wherein the  
2        conduction means comprises a transistor having a first conduction terminal  
3        coupled to receive the first signal and a control terminal coupled to receive the  
4        control signal.

- 1           22.   The current controlled voltage regulator of claim 21, wherein the  
2 transistor includes a field effect transistor.

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UNISYS RA-5357  
ALG 740.305-US-01  
Express Mail ET351442385US  
Patent Application